CLOTHES DRYER

Basic Model : DV431AEP/XAA (YUKON-PROJECT)

Model Name : DV395ETPASU (POTOMAC-PROJECT)

Model Code : DV395ETPASU/A1

SERVICE Manual

CLOTHES DRYER

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1. Safety Instructions
2. Features and Specifications
3. Disassembly and Reassembly
4. Troubleshooting
5. PCB diagram
6. Wiring diagram
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Refer to the service manual in the GSPN (see the rear cover) for the more information.

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1. SAFETY INSTRUCTIONS

1-1. CAUTION FOR SAFETY DURING SERVICING

1. Do not allow the customer to repair the product.
   ✔ The person may be injured or the product life may be shortened.

2. Execute A/S after unplugging the power supply unit.
   ✔ Be careful of the electric shocks.

3. Do not plug several plugs in the same outlet.
   ✔ It may cause a fire due to overheat.

4. Check for damage, pinching or burning of the power plug the outlet.
   ✔ Replace it promptly if it has a problem.(It may cause the electric shocks or fire)

5. Do not clean the main body with water.
   ✔ It may cause electric shocks and fire and shorten the product life)

6. The wiring harness shall be free from moisture and tightened during serving.
   ✔ It shall not be deviated by certain impact.

7. Remove any dust or dirt on the housing section,wiring section,connection section during servicing.
   ✔ Protect from possible cause of fire such as the tracking,shortage etc.

8. Check for any marks of moisture on the electrical parts, harness section etc.
   ✔ Replace the parts or remove the moisture.

9. Check the assembly status of the parts after servicing.
   ✔ Maintain the status before servicing.

10. Pull out the power cord by holding the plug.
    ✔ Be careful of electric shocks and when the cord is damaged.

11. Unplug the power plug from the outlet when the dryer is not used.
    ✔ Be careful of electric shocks and fire due to the strike of lightning.

12. Do not use or store sprays or flammable materials(including gasoline,alcohol etc.) around the dryer.
    ✔ Be careful of explosions or fire due to electric sparks.

13. Do not put bowls of water or wet laundry on the dryer.
    ✔ If water has penetrated into the dryer, this may cause electric shocks or fire.

14. Do not install the dryer outside exposed to moisture.
    ✔ It may cause electric shocks and fire and shorten the product life.

15. Do not push the control buttons with an awl,pin, or sharp materials.
    ✔ It may cause electric shocks and damage.

16. Check the dryer is leveled horizontally and installed properly on the floor.
    ✔ The vibration may shorten the product life.

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1-2. IMPORTANT SAFETY INFORMATION

To avoid risk of fire, electric shock, serious injury, or death when using your dryer, follow these basic precautions:

1. Read all instructions before using the dryer.

2. Install dryer according to Installation Instructions. Refer to the Grounding Instructions in the Installation Instructions for proper grounding of the dryer.

3. Do not dry articles that have been cleaned in, washed in, soaked in, or spotted with gasoline, drycleaning solvents, or other flammable or explosive substances. Vapors could ignite or explode.

4. Do not use the dryer to dry clothes which have traces of any flammable substance, such as vegetable oil, cooking oil, machine oil, flammable chemicals, thinner, etc., or anything containing wax or chemicals, such as mops and cleaning cloths. Flammable substances may cause the fabric to catch fire by itself.

5. Do not store or use gasoline or other flammable vapors and liquids near this or any other appliance.

6. Do not allow children to play on or in dryer. Close supervision of children is necessary when the dryer is used near children, a safety rule for all appliances.

7. Before the dryer is removed for service or is discarded, remove doors to drying compartment.

8. Do not reach into the dryer if cylinder is rotating.

9. Do not install or store the dryer where it will be exposed to water and/or weather.

10. Do not tamper with dryer controls.

11. Do not repair or replace any part of the dryer or attempt any service, unless specifically recommended in user-maintenance instructions or in published user-repair instructions that you understand and have skills to carry out, if you are a consumer.

12. To reduce risk of electric shock or fire, do not use extension cords or adapters to connect the dryer to electrical power source.

13. Use the dryer only for its intended purpose, drying clothes.

14. Always disconnect the dryer from electrical supply before attempting any service. Disconnect the power cord by holding the plug, not the cord.

15. Do not use heat to dry articles containing foam rubber or similarly textured rubberlike materials.

16. Always clean the lint filter after every load. A layer of lint in the filter reduces drying efficiency and pro longs drying time.

17. Use only fabric softeners or products to eliminate static that are appropriate for automatic dryers.

18. Keep your dryer in good condition. Bumping or dropping the dryer can damage safety features. If damage occurs, have the dryer checked by a qualified service technician.

19. Replace worn power cords and/or loose plugs.

20. Do not tumble fiberglass curtains and draperies unless the label says it can be done. If they are dried, wipe out the cylinder with a damp cloth to remove particles of fiberglass.

21. Always read and follow manufacturers instructions on packages for laundry aids. Heed all warnings or precautions. To reduce risk of poisoning or chemical burns, keep products away from children at all times, preferably, in a locked cabinet.

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22. Never operate the dryer with the guards and/or the panels removed.

23. Do not operate the dryer with missing or broken parts.

24. Do not bypass safety devices.

25. Keep area around the exhaust opening and adjacent surrounding areas free from accumulation of lint, dust, and dirt.

26. Interior of dryer and exhaust duct should be cleaned periodically by qualified service personnel.

27. The dryer will not operate with loading door open. DO NOT bypass the door safety switch by permitting the dryer to operate with door open. The dryer will stop tumbling when the door is opened. Do not use the dryer if it does not stop tumbling when door is opened or starts tumbling without pressing or turning the START mechanism. Stop using the dryer and contact a qualified service technician.

28. Remove laundry immediately after the dryer stops.

29. ALWAYS follow the fabric care instructions supplied by the garment manufacturer.

■ Electrical service information

Electrical Dryers	240 VAC, 60 Hz, 30 Amps, 3-wire or 4-wire installations
Gas Dryers	120 VAC, 60 Hz, 15 Amps, 3-wire installations

⚠ WARNING

To reduce the risk of fire, electric shock, serious injury or death, all wiring and grounding must conform with the latest edition of the National Electric Code, or the Canadian Electrical Code, and such local regulations as might apply. It is the customers responsibility to have the wiring and fuses checked by a qualified electrician to make sure your home has adequate electrical power to operate the dryer.

⚠ WARNING

To avoid risk of personal injury or death due to electrical shock:

- Observe all local codes and ordinances.
- Disconnect the electrical power to the unit before servicing.
- Ground the appliance properly.
- Check with a qualified electrician if you are not sure this appliance is properly grounded.
- DO NOT ground to a gas line.
- DO NOT ground to a cold water pipe if pipe is interrupted by plastic, nonmetallic gaskets, or other insulating (nonconducting) materials.
- DO NOT modify the plug on the power cord. If plug does not fit electrical outlet, have proper outlet installed by qualified electrician.
- DO NOT have a fuse in the neutral or ground circuit. A fuse in the neutral or ground circuit could result in an electrical shock.
- DO NOT use an extension cord with this appliance.
- DO NOT use an adapter plug with this appliance.
- DO NOT pinch the power cord.

⚠ WARNING

To reduce the risk of fire and exposure to combustion gases, the dryer MUST be exhausted to the outdoors.

DO NOT exhaust dryer air into a window well, gas vent, chimney or enclosed, unventilated area, such as an attic, wall, ceiling, crawl space under a building or concealed space of a building.

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■ Gas dryer power supply

This equipment MUST be grounded. In the event of an electrical short circuit, grounding reduces the risk of electric shock by providing an escape wire for the electrical current. This unit is equipped with a cord having a grounding wire with a grounding plug. The plug must be plugged into an outlet that is properly installed and grounded.

Consult a qualified electrician or servicer if grounding instructions are not completely understood, or if doubt exists as to whether the equipment is properly grounded.

Do not use an extension cord. If the product power cord is too short, have a qualified electrician install a three slot receptacle. This unit should be plugged into a separate 60 hertz circuit with the electrical rating as shown on the serial plate.

■ Proper grounding and polarization for 120 volts wall outlets

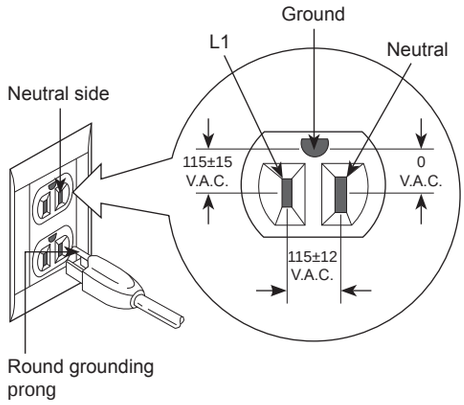
For the safety of our customers and the service technician ALL gas dryers have a three-prong power cord and MUST be connected to a properly polarized and grounded wall outlet. This information was written for those who do not understand grounding and polarization of a wall outlet. A 120 VAC wall outlet must always be wired as shown right.

Polarization - This means that the larger slot must be neutral and the small slot must be hot (live).

Mispolarized - The outlet is miswired so that the larger slot is hot (live) and the smaller slot is neutral.

Grounded - This means the round hole connection is connected to ground through a connection to the main power panel.

Ungrounded - The round hole connection is not connected to a ground and/or the main power panel.



⚠ WARNING

To avoid death, personal injury or property damage, from fire or explosion, information in this manual must be followed exactly.

Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.

WHAT TO DO IF YOU SMELL GAS

- Do not try to light any appliance.
- Do not touch any electrical switch; do not use any phone in your building.
- Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions.
- If you cannot reach your gas supplier, call the fire department. Installation and service must be performed by a qualified installer, service agency or the gas supplier.

⚠ WARNING

To reduce the risk of fire and exposure to combustion gases, the dryer MUST be exhausted to the outdoors.

DO NOT exhaust dryer air into a window well, gas vent, chimney or enclosed, unventilated area, such as an attic, wall, ceiling, crawl space under a building or concealed space of a building.

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2. FEA TURES AND SPECIFICATIONS

2-1. FEA TURES

Features	Description
Extra Large Capacity	Ultra drying capabilitlites are at your fingertips! Now you can dry extra-large loads. Our ultralarge 7.4 cu.ft. capacity dryer circulates more air through your clothes getting them dry faster, for a wrinkle-free result.
Various Drying Cycles & Fuzzy Logic Algorithm	Simply turn the Jog Dial to select one of the 11 automatic drying cycles, including normal, heavy duty and towels, or let the Fuzzy Logic Control measure the degree of dampness and automatically set the drying time. Precision drying has never been easier than with Samsung.
Sanitize course	This course allows you to sanitize garments by permeating high temperature heat deep into the fabric during the drying cycle. Use this course to keep your bedding and curtains clean. When selecting this cycle, 99.9% of all bacteria is eliminated through high temperature heat. Use this cycle for clothing, bedding, towels, or other items needing sanitization. This certification is conducted by NSF International, an independent third-party testing and certification organization
Time Saving	Our cycles are designed with you in mind. All our dryers are designed to dry your clothes in less time... just 44 minutes! Giving you time for more important things in life.
Energy Saving	Samsung dryers are super energy efficient, that you can dry up to 3.01 pounds of laundry with 1kWh. Also, both the large capacity and Fuzzy Logic Control save energy by automatically drying your clothes the most efficient way.
Easy Reversible Door	Our dryers will fit just about anywhere and without a door conflict. The direction of our easy reversible door can be changed with just four screws.
Pedestal with Storage Drawers	An optional 15” pedestal is available to raise the washer for easier loading and unloading. It also offers a built-in storage drawer that can hold a 100 oz. bottle of detergent
Stacking	Samsung’s Washer and Dryer can be stacked to maximize usable space. The Dryer legs need to be removed to stack the Washer and Dryer. An optional stacking kit is available for purchase from your Samsung retailer.
Steam cycle	This cycle sprays steam using little water, removes bad odors from clothing that ARE difficult to remove when washing with water, and removes wrinkles from clothing such as shirts that need to be ironed.
Sanitize course	This course allows you to sanitize garments by permeating high temperature heat deep into the fabric during the drying cycle. Use this course to keep your bedding and curtains clean through sanitization.
4-way Vent (Electric model only)	You can install the exhaust vent in the following four (4) positions: back, either side, bottom.
Smart Care	This function diagnoses problems by itself. You don’t need to call a service engineer or try to find the user manual whenever the product has a problem, as Smart appliances let you know how to deal via the problem through your smart phone.

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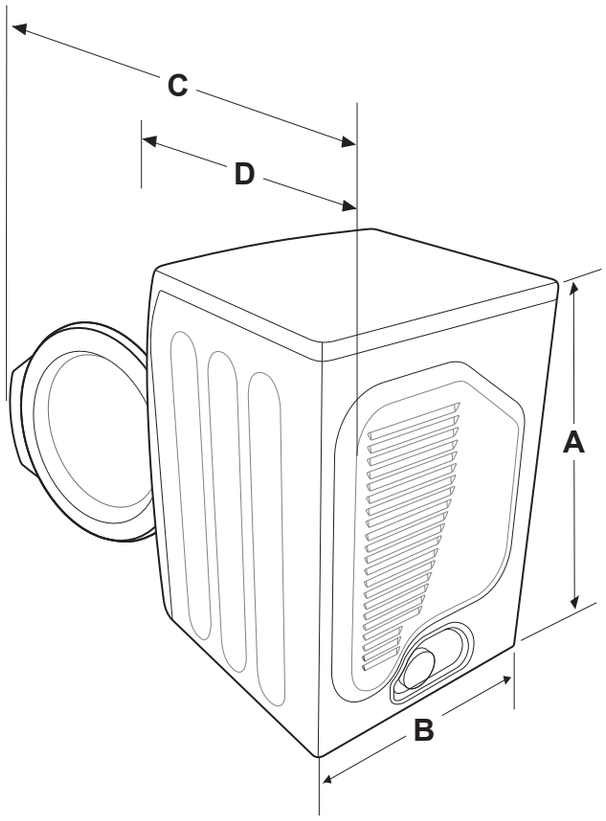
2-2. SPECIFICA TIONS

MODEL NAME		DV405*TPA** / DV395**/DV393**
TYPE		Front loading dryer
DIMENSION	A: HIGH	39”(99.1cm)
	B: WIDTH	27” (68.6cm)
	C: DEPTH WITH DOOR OPEN 90°	49.6’’ (126.0cm)
	D. DEPTH	31.1” (78.9cm)
WEIGHT		126.1lb (57.2kg)
HEATER RATING		5300 W (Elec.) 22000 BTU/hr (Gas)
WATER PRESSURE		20-116 psi (137-800kPa)



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2-3. COMPARING SPECIFICATIONS WITH EXISTING MODELS

Model Name		DV405*TPA** / DV395** / DV393**	DV431A*
Image			
Capacity		7.4 cu.ft	7.4 cu.ft
Dryer Type		Electric/Gas	Electric/Gas
Matching Washer		WF405	WF431
Cycle Selection	Number of Drying Cycle	13	13
	Refresh(Freshen Up)	Yes	Yes
	Wrinkel-Care (Wrinkle Release)	Yes	Yes
	Normal	Yes	Yes
	Heavy Duty	Yes	Yes
	Towels	Yes	Yes
	Bedding PLUS	Yes	Yes
	Wool	Yes	Yes
	Perm Press	Yes	Yes
	Delicates	Yes	Yes
	Sanitize	No	No
	Time Dry	Yes	Yes
	Air Fluff	Yes	Yes
	Quick Dry	No	No
Option Selection	Number of Option	7	7
	Adjust Time	Up/Down	Up/Down
	My Cycle	Yes	Yes
	Mixed Load Bell	Yes	Yes
	Delay Start	Yes	Yes
	Rack Dry	Yes	Yes
	Wrinkle Prevent	Yes	Yes
	# of Temp Level	5	5
	# of Dryness Level	5	5
	Sound Level	3	3
Control Type		Electric/Dial	Electric/Dial
Drum Material		STS Steel	STS Steel
Drum Light		Yes	Yes
Door Type		Glass Transparent	Glass Transparent
Reversible Door		Yes	Yes
Vent Exhaust		4-way(Elec)	4-way(Elec)

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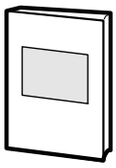
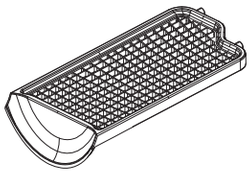
2-4. OPTIONS SPECIFICATIONS

Item		Code	QTY	Remarks
	MANUAL-BOOK	DC68-03021F	1	
	DIE-RACK DRY	DC61-02773A	1	
	ASSY CONNECTOR - Outer Diameter : 24mm - Pitch : 2.2mm	DC97-15103A	1	
	ASSY HOSE WATER - Outer Diameter : 27.5mm - Pitch : 2.2mm	DC97-15249A	1	

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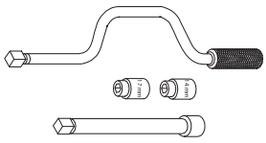
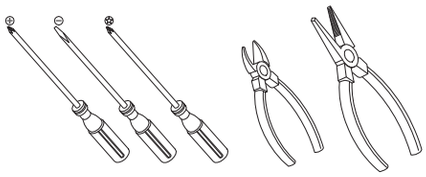
3. DISASSEMBL Y AND REASSEMBLY

3-1. TOOLS FOR DISASSEMBLY AND REASSEMBLY

Tool		Type	Remarks
	Socket set with 6” extention	14 mm 17 mm	Fan (1) Roller Shaft (4)
	Wrench	8 mm	Tool to fix the Roller Shaft on removing the nuts.
	Vice pliers		Tool to protect the idle and abrasion of the bolt for the box driver.
	Other (Driver, Diagonal Cutter, Long Nose Pliers)		General tools for the after service.

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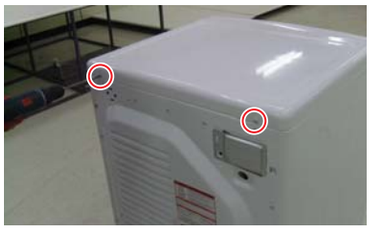
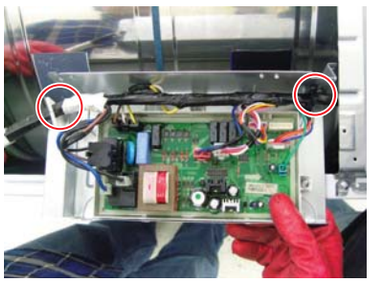
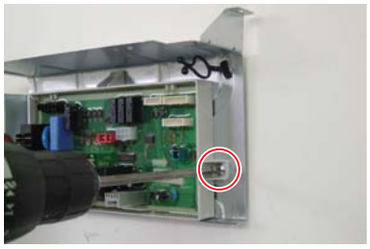
3-2. STANDARD DISASSEMBLY DRAWINGS

⚠ **To avoid risk of electrical shock, personal injury or death, disconnect the power to the Clothes Dryer.**
To prevent scratches and cuts on hands, you should put on gloves on hands.

► This is a standard disassembly diagram and may differ from the actual product.
Use this material as a reference when disassembling and reassembling the product.

Part	Figure	Description
Top Cover Removal		1. Disconnect the power supply and to the unit 2. Remove 2 screws from the Top- Cover
		3. Slide Top Cover towards the rear and lift from the unit. Scratch and impact to the top cover is prohibited.
Main PCB Removal		1. Disconnect the power supply and to the unit 2. Remove the Top Cover 3. Remove 3 screws from the frame+plate
		4. Remove the Wire holder
		5. Remove the Housings Shaking the heater terminal side ways to pull it out is prohibited.
		6. Remove 1 from the Holder PCB

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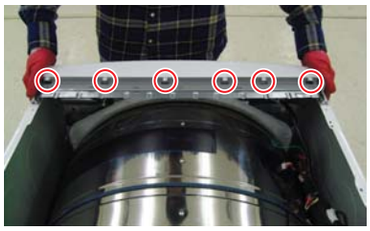
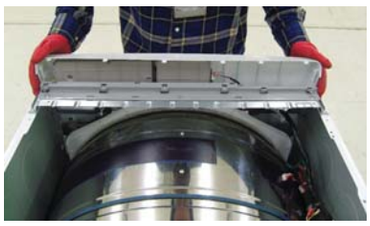
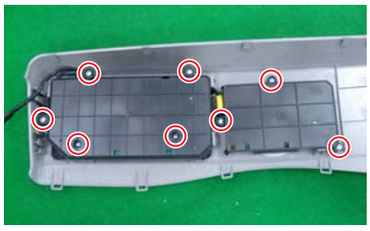
Part	Figure	Description
Console Removal		1. Disconnect the power supply to the unit 2. Remove the top cover, and the main PCB 3. Separate 6 Hook from Guide Panel
		4. Remove Console
		5. Remove Each Housing
		6. Remove the Knob
		7. Remove 8 screws from the Holder PCB Be careful of external scratch on the console.

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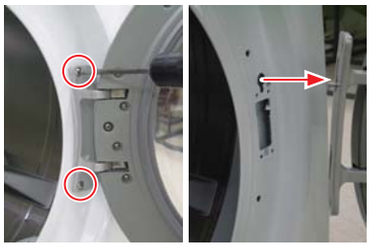
Part	Figure	Description
Door Removal		1. Door Opening 2. Remove 2 screws from the Frame panel 3. Separate the temporary fixation part of the assembly door.
		4. Remove 15 screws from the Holder Glass
		5. Remove the Door cover
		6. Remove 8 screws from the Support-Hinge
		7. Remove the Support-Hinge, Hinge
		8. Remove the Door Seal A. Be careful not to scratch the door cover. B. Be careful of the damage to the door glass. C. Check the door seal condition after the assembly.

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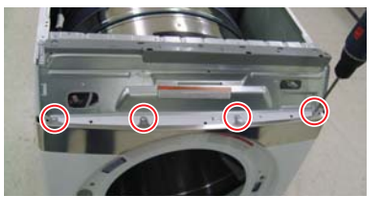
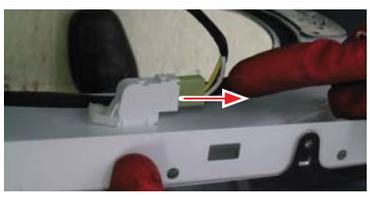
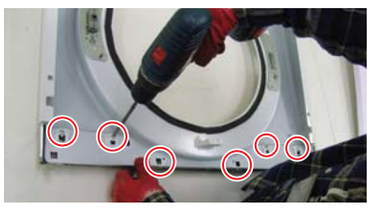
Part	Figure	Description
Frame Panel Removal		1. Disconnect the power supply to the unit 2. Remove the Top Cover, and the Console 3. Remove the filter
		4. Remove 2 screws from the Frame front
		5. Remove 4 screws from the Plate (u)
		6. Push the flange
		7. Remove the Door switch Housing
		8. Lift the Front Panel off the three tabs across the bottom and remove
		9. Remove 6 screws from the Frame Panel
		10. Remove the Decoration-Front from the Frame Panel Always wear the protective gloves.

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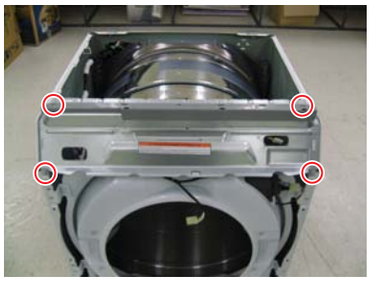
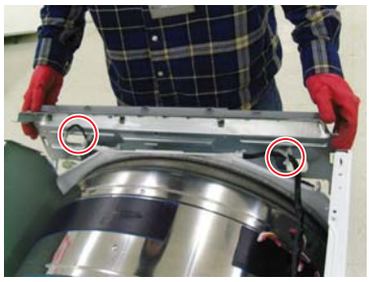
Part	Figure	Description
Plate Removal		1. Disconnect the power supply to the unit 2. Remove the Top Cover, the console, and the front panel 3. Remove 4 screws from the Plate (u)
		4. Separate the Wire in the Wire Holder

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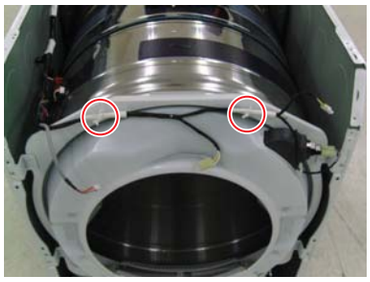
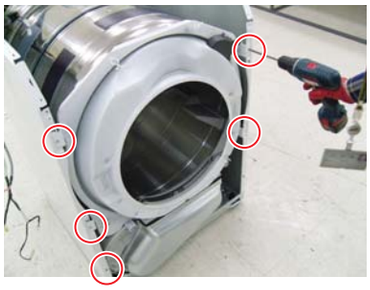
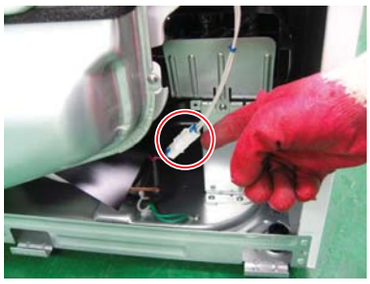
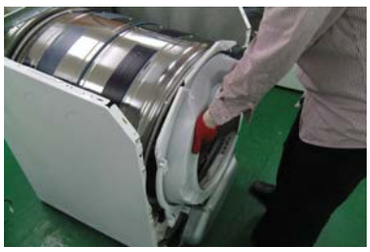
Part	Figure	Description
Front Bulkhead Removal		1. Disconnect the power supply to the unit 2. Remove the Top Cover, the Console, the front panel and the Plate(u) 3. Separate the wire in the wire Holder (2EA) 4. Disconnect Interior Light wiring Harness
		5. Remove the four bulkhead retaining 5 screws.
		6. Disconnect the moisture Sensor wiring Harness
		7. Lift Bulkhead from the cabinet then remove it.
		8. Remove 2 screws from the Duct Outlet
		9. Remove the Duct Outlet

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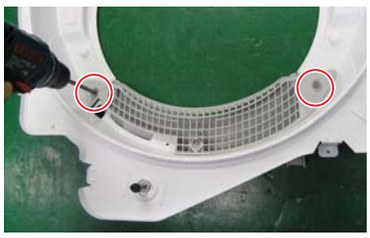
Part	Figure	Description
Front Bulkhead Removal (Continued)		10. Remove 1 screw from the Touch Sensor
		11. Remove the Touch Sensor
		12. Remove the Snap Ring and the Roller
		13. Remove 2 screws from the Case Filter (B)
		14. Remove 1 screw from the Case Filter (F)
		15. Remove the Case Filter (B/F) Make sure the Filter does not get damaged by the roller.

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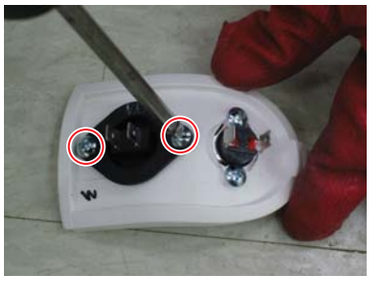
Part	Figure	Description
Drum Removal		1. Disconnect the power supply to the unit 2. Remove the Top Cover, the console, the Front panel, the Plate(u), and the Front Bulkhead 3. Remove Belt
		4. Remove the Drum
Sensor (Thermistor, Thermostat) Removal		1. Disconnect the power supply to the unit 2. Remove the Top Cover, the console, and the Front panel 3. Remove 2 Housing Sensor
		4. Remove the Sensor Cover
		5. Remove the Sensor Do not apply excessive force to the terminal.

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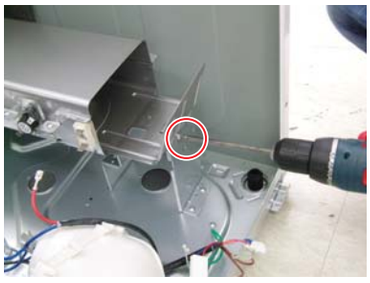
Part	Figure	Description
Heater Removal		1. Disconnect the power supply to the unit 2. Remove the Top Cover, the console, and the Front panel 3. Removal 6 Housing Heater-Terminals
		4. Remove 1 screw from the Heater
		5. Separate the Heater from the Drum-back
		6. Remove 4 screws from the thermostats Do not apply excessive force to the terminal.

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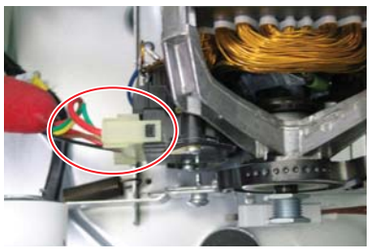
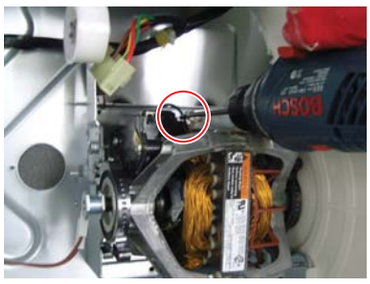
Part	Figure	Description
Assy Motor Removal		1. Disconnect the power supply to the unit 2. Remove the Top Cover, the console, the Front panel, the Plate(u), the Front Bulkhead and the Drum 3. Remove 2 screws from the Duct Connector
		4. Separate the duct Connector
		5. Remove 1 Housing Motor
		6. Remove 2 Housing Belt Cut Off Switch
		7. Remove 2 screws from the motor-bracket
		8. Remove 2 screws from the Cover-Dust Fan

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Part	Figure	Description
Assy Motor Removal (Continued)		9. Separate the motor ASSY at the bottom Plate
		10. Remove 1 Nut Fan
		11. Remove the Fan
		12. Remove 3 screws from the Cover-Duct fan
		13. Remove the 2 Spring Plate
		14. Remove the 1 screw Belt cut Off Switch

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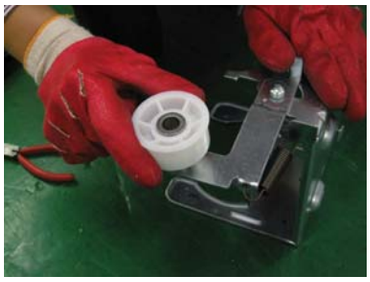
Part	Figure	Description
Assy Motor Removal (Continued)		15. Remove the Holder Shaft
		16. Remove the Roller-Idler

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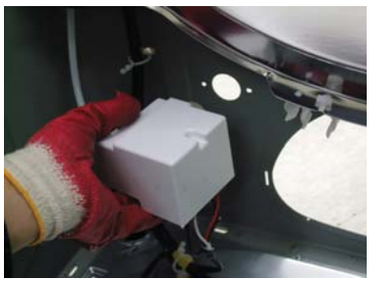
Part	Figure	Description
Drum Back Removal		1. Disconnect the power supply to the unit 2. Remove the Top Cover, the console, the Front panel, the Plate(u), the Front Bulkhead and the Drum 3. Remove 7 screws from the Drum-Back
		4. Remove 2 screws from the Valve-Water.
		5. Separate the wire in the wire Holder
		6. Separate the Drum Back from the Frame.
		7. Separate the Cover Valve-Water
		8. Remove the terminals from the Valve-Water

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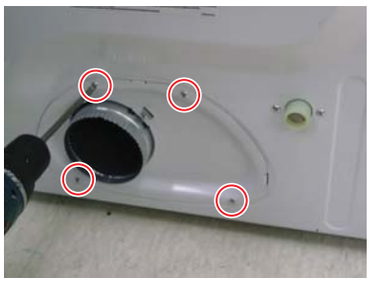
Part	Figure	Description
Drum Back Removal (Continued)		9. Remove 4 screws from the Air Duct Be careful of the frame edge
		10. Remove the 3 screws from the Guide Nozzle
Duct Exhaust Removal		1. Disconnect the power supply to the unit 2. Remove 4 screws from the Back-Cover
		3. Remove 1 screw from the Duct-Exhaust

Reassembly procedures are in the reverse order of dissasembly procedures.

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4. TROUBLESHOOTING

4-1. ERROR ITEMS AND DIAGNOSTIC CODES

An occurrence of an Error will make a sound of error melody for 5sec and continuously show one of the Error Displays from the following errors.

Error Display	Trigger	Action Taken
tE	The Termistor resistance is very low or high.	Check for: - Clogged lint screen. - Restricted vent system. - Check Thermistor resistance.
HE	Invalid heating Temp in running the dryer	Check for: - Restricted vent system. - Check Thermistor resistance.
dE	Running the dryer with door open	Check for: - Close the door, and run the dryer. - Loose or open wire terminals in Door Sense circuit.
dF	Invalid door state for more than 256 milliseconds	Check for: - Loose or open wire terminals in Door Sense circuit.
bE2	Invalid state of key circuit short for 30 secs	Check for: - Display PCB key circuit short or not.
FE	Invalid power source Frequency	Check for: - Not using regular power source frequency. - Invalid power frequency sense circuit.
2E	Electronic Control Problem (Over Voltage Error)	Check for: - Check PCB and Wire harness. - Check Power supply.
AE	Electronic Control Problem (Communication Error)	Check for: - Check PCB and Wire harness. - Replace PCB.
Et	Invalid state of Eeprom communication	Check for : - PCB with Eeprom circuit.

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4-2. TEST MODE

■ Service Mode(DV431,DV405 only)

How to Enter:

- To enter Service Mode , press Mixed Load Bell + Temp. Keys 3 seconds in normal mode until it sends out a beeping sound.
- If pressing Mixed Load Bell + Temp. Keys in Service mode , it will return Normal mode.
- Even though entering Service mode, the operating cycle will not be influenced.

■ DR Ready Modem Wire Test(DV431AS* only)

How to Enter:

- After entering Service Mode, press the Wrinkle Prevent button to start the Wire Test.
- During the test, “----” is displayed.
- If the test result is normal after the test, “SG” is displayed.
- If a problem occurs, the “AE3” error code is displayed.

■ Touch Sensor Data Display Mode

Definition of Sensor Bar Touch Data Mode:

- This mode is default mode of entering service mode.

How to Enter:

- With Power On pressing Mixed Load Bell +Temp(DV431, DV405) or Wrinkle Prevent + Temp(DV231) for 3 seconds.
- This action will put the dryer into sensor bar touch data mode.
- Dryer will display Sensor Bar data.

■ Cycle Count Mode

Definition of Sensor Bar Touch Data Mode:

- This mode is to bring up the total number of cycles that User have carried out.

How to Enter:

- Press the Mixed Load Bell(DV431, DV405) orTime(DV231) key in Service Mode.

■ Software Revision Mode

Definition of Software Version Mode:

- It is to retrieve its software version.

How to Enter:

At Service Mode, press Temp until it sends out a beeping sound.

ex) In case of “U1 05”, U1 means major version “U1”, 05 means minor version “05”.

- If press Temp key In Software Version Mode, it will return Service Mode.

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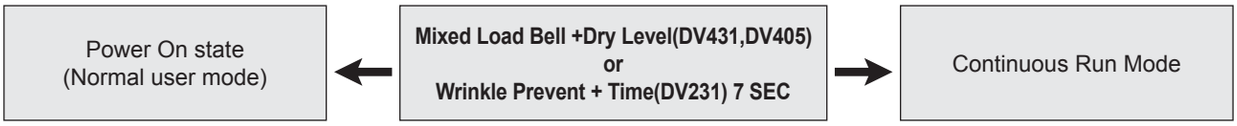
■ Continuous Run Mode



How to Enter:

- Press Mixed Load Bell +Dry Level(DV431, DV405) or Wrinkle Prevent + Time(DV231) for 7 sec during Power On State (normal user mode).
- Once in Continuous Run Mode, display “cc” for 1 sec and finished cycle count for 1 sec and the remaining time for 1 sec in turns.
- The previous cycle will restart during Continuous Run Mode until the mode is deactivated.
- During Continuous Run Mode, press Mixed Load Bell +Dry Level(DV431, DV405) or Wrinkle Prevent + Time(DV231) for 7 seconds to go back to normal user mode.

■ Data Display Mode (DV431, DV405 only)

How to Enter:

- With Power On, press AdjustUp Key + AdjsutDown Key for 7 seconds until it sends out a beeping sound .
- If not pressed any keys for 5 minutes, it will be set back from Data Display Mode.
- If pressing AdjustUp Key in this mode ,Display Mode ID will be incresed.
- If pressing AdjustDown Key in this mode ,Display Mode ID will be decresed.

Definition of Software Version Mode:

- Display Mode 0 : Temperature data
- Display Mode 1 : Average Touch Sensor data for 1 minute
- Display Mode 2 : Average Temperature data for 1 minute

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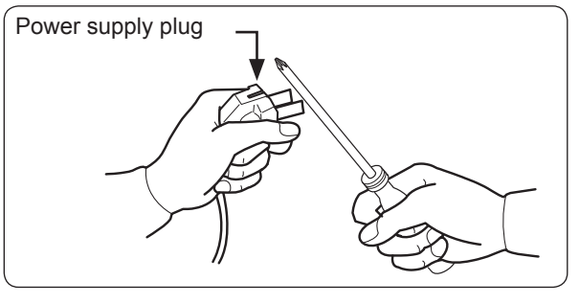
4-3. TROUBLE DIAGNOSIS

As the micom dry machine is configured for the complicate structure, there might be a service call.
The below information is prepared for exact trouble diagnosis and suitable repair guide.

■ Caution for the repair and replacement

Please follow below instruction for the trouble diagnosis and parts replacement.

1. As some electronic components can be damaged by static electricity from the resin part of dryer or the human body, remove the potential difference of the human body and the dryer by contacting the power plug before you start working at PCB.



2. Since AC220~240V is applied to the triac T1 and T2 on P.C.B, the electric shock may occur by touching. Be careful the strong and weak electricity are mixed each other.
3. As the P.C.B assembly is designed for no trouble, do not replace the P.C.B assembly by the wrong diagnosis and follow the procedure of the trouble diagnosis when the micom is not operated normally.

No	Problem	What to do
1	Will Not Start or Run	• All wires are hooked up to their corresponding terminals. • Is the dryer is plugged in. • Blown fuse or circuit breaker. • Is the Door switch functional...door closed. Check for error code 3 (See Table for code definition). • Start/Pause rotary selector dial functional. • Is the control Board operational. • Belt off or broken and Belt Cut-off Switch operates. • Is the motor functional. • Check motor winding resistance: 2.88ohms between pin #3 and 4, 3.5ohms between pin #4 and 5.
2	Motor runs/ tumbler will not turn	• Belt off or broken/damaged. • Idler tension spring too weak or stretched. • Idler pulley jammed or stuck.
3	Runs a few minutes and then stops	• Lint buildup around drive motor. • Low voltage present. • Blower impeller blocked in blower housing. • Check the actuator of motor.
4	Blows fuses or trips circuit breaker	- Is the belt connected well? - Is the winding of the motor continuous? (Rotor winding, stator winding, generator) - Is the motor protector normal? • If above points are not found, the PCB assembly is out of order. Replace it.
5	Blows fuses or trips circuit breaker (Gas Model)	• During ignition the dryer will draw 6 amps. With the burner ON, the dryer will draw 4.5 amps. If the dryer is drawing amperages above this, then the house wiring, fuse box or circuit breaker is suspected to be at fault. • Igniter harness loose and shorted to base. • Incorrect wiring or wire shorted to ground. • Drive motor winding shorting to ground.
6	Will not heat (motor runs)	Open heating element. • Hi-Limit trips easily or is open. • Regulating thermostat trips easily or is open. • Membrane switch open. • Check Thermistor.

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No	Problem	What to do
7	Will Not Dry Gas Model Poor Gas Ignition	When the dryer is operated on a heat setting, the igniter should be energized and burner shall fire within 45 seconds at 120 VAC. The failure of a component in this system will usually be indicated by one of three symptoms (No.8, No.9, No.10)
8	The igniter does not glow	If the igniter does not heat up, remove power and using an ohmmeter, check the following: • Open flame sensor • Open igniter • Shorted booster coil • Open wiring • Bad motor switch (Neutral supply) • No power from control (L1 supply)
9	Igniter glows - No gas ignition	If the igniter heats up but the main burner flame is not ignited, remove power and using an ohmmeter, check the following: • Open secondary coil • Open holding coil • Open wire harness • Stuck flame sensor (Stuck closed)
10	The gas is ignited but the flame goes out	If a normal ignition takes place and after a short while the flame goes out, check for the following: • Radiant sensor contacts opening prematurely. • Weak gas valve coil may open when stressed by higher Temps. • Weak Hi-Limit • Poor venting • Bad drum seals
11	Improper drying clothes wrinkled Rough texture long dry time	• The lint filter is not clean. • Any restriction in the exhaust. • The outside exhaust hood damper door stuck closed. • Is the exhaust too long, too many elbows, flex ductwork installed. • Poor intake air available for the dryer. • Incorrect tumbler speed. Tumbler belt slipping. • Blower impeller bound; check for foreign material in blower area. • Customer overloading dryer. • Check clothing labels for fabric content and cycle selected. • Clothes too wet due to insufficient spin out by washer.
12	Noisy and/Or Vibration	• “Thumping” Check for loose tumbler baffle, rear tumbler roller(s) worn or misaligned, out-of-round tumbler or high weld seam on tumbler. • “Ticking” Check for loose wire harness or object caught in blower wheel area. • Scraping Check for front or rear bulkhead felt seal out of position or worn tumbler front bearings. • “Roaring” Check for blower wheel rubbing on blower housing or bad motor bearings. • Popping or squealing sound. Check for a sticky or frayed belt.

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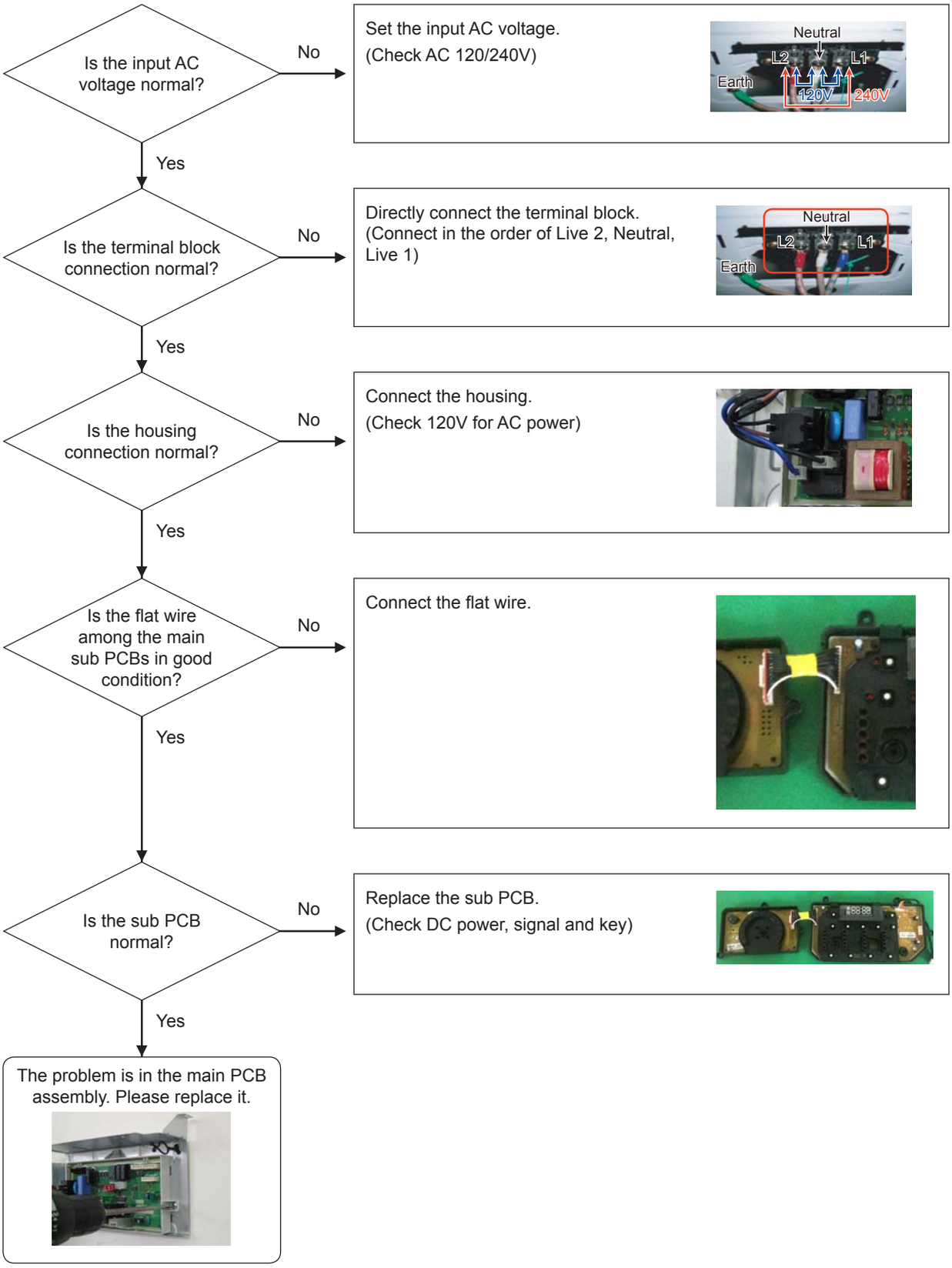
4-4. SYMPTOMS, DIAGNOSES AND ACTIONS

■ The power does not work.



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■ The drum does not work.

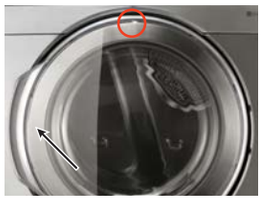
Is the Start button on?

- No → Press the Start button.
  (Start/Pause is repeated)

- Yes ↓

Is the door closed properly?

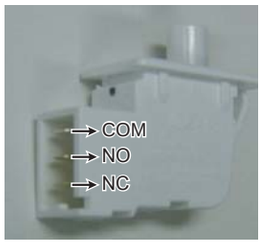
- No → Close the door.
  (Check whether the door S/W is pressed)



- Yes ↓

Is the connection to the door S/W normal?

- No → Check the wire connection of the power supply.
  (Check the contact point and connected condition of the door S/W)



- Yes ↓

Is the thermostat normal?

- No → Check if the connector is normal.
  (Normal: Check whether it is 0Ω when the power is unplugged)

- Yes ↓

Is the connected condition of the belt normal?

- No →
  1. Check the belt cut S/W and connected condition.
     (Normal: Check whether it is 0Ω when the power is unplugged)
  2. Check the connected condition of the motor, idler and drum belt.

- Yes ↓

Is the motor normal?

- No → Check whether the motor protector is operating.
  (Check for overload, drum constraint, centrifugal S/W etc.)

- Yes ↓

The problem is in the PCB assembly. Please replace it.

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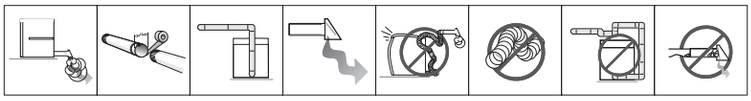
■ The clothes are not dried.

Is the vent properly installed?

- No → Install the vent so that it is not blocked to the outside.
  (Check the exhaust hole)



- Yes ↓

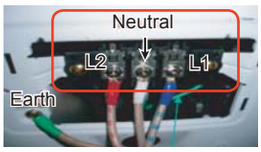
Did you clean the filter before drying?

- No → Clean the filter.
  (Check if there are any alien particles in the filter)

- Yes ↓

Is the terminal block connection normal?

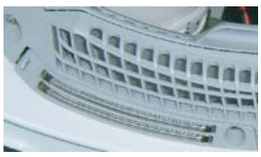
- No → Connect the terminal block properly.
  (Check the connection of Live 2, Neutral, Live 1)



- Yes ↓

Is the touch sensor normal?

- No → Connect the touch sensor.
  (Check the PCB and touch sensor)



- Yes ↓

Is the Tamp. Sensor normal?

- No → Replace the thermistor
  (Check the connection between the PCB and termistor and check for any disconnection)

- Yes ↓

Is the safety, Hi-limit thermostat normal?

- No → Check the Safety, Hi-Limit thermostat.
  (Check the cause of safety being off)

- Yes ↓

Is the heater normal?

- No → Replace the heater
  (Remove the power and check whether the heater coil has a resistance of about 10Ω)

- Yes ↓

The problem is in the PCB assembly. Please replace it.

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■ The lamp does not work.

Is the door S/W structurally on/off?

No → Replace the door S/W.
(Door operation of door S/W)

Yes ↓

Is the power connection normal?

No → Connect the power properly.
(Check the connection between terminal block and door S/W)

Yes ↓

Is the lamp socket normal?

No → Replace the lamp socket.
(Check the lamp socket for damage or loose connection)

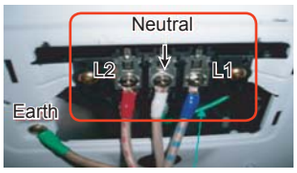
Yes ↓

Is the lamp normal?

No → Replace the lamp.
(Check for disconnection of lamp and socket)

Yes ↓

Check if the input voltage is properly coming in.



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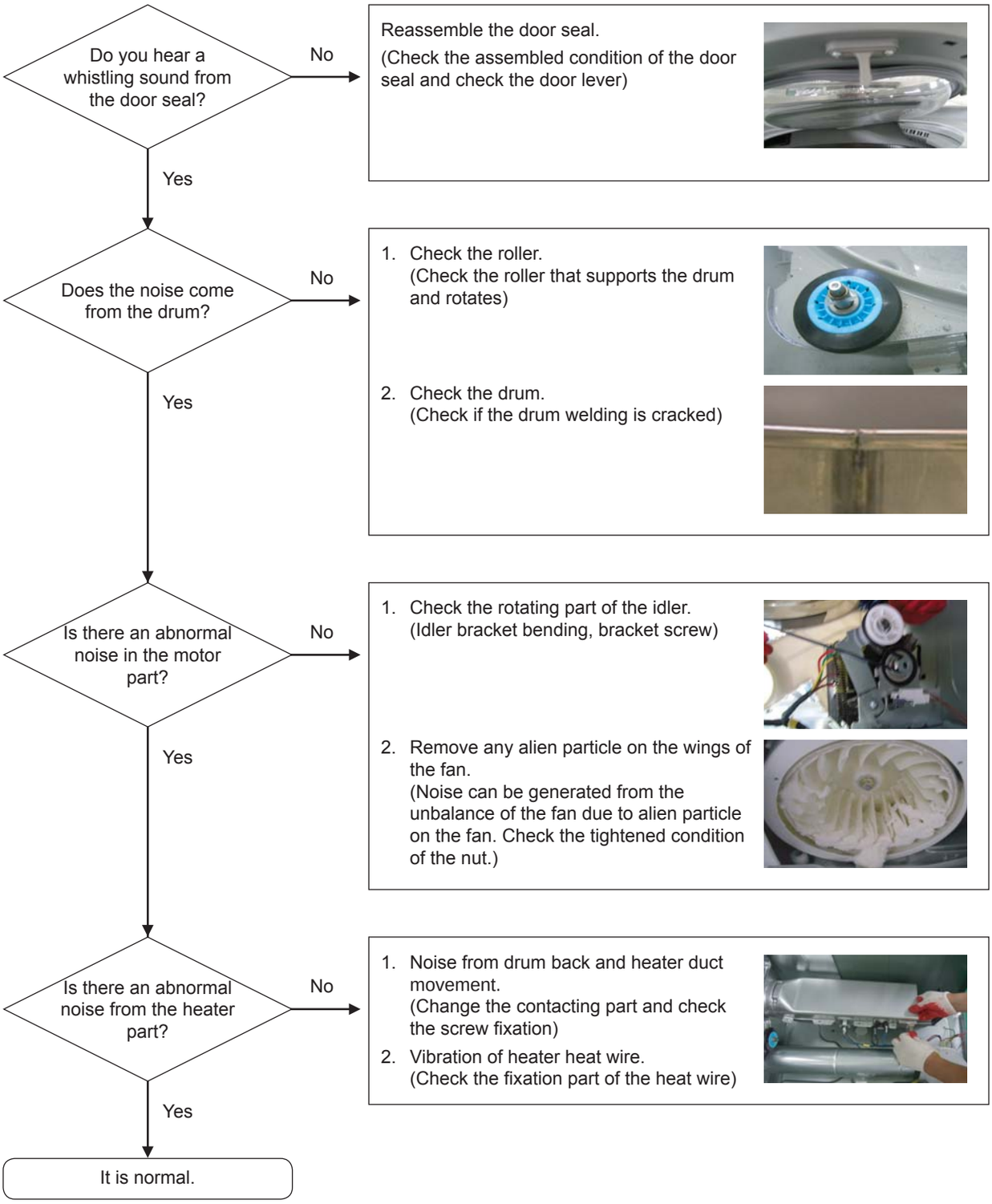
■ There is an abnormal noise in the dryer.



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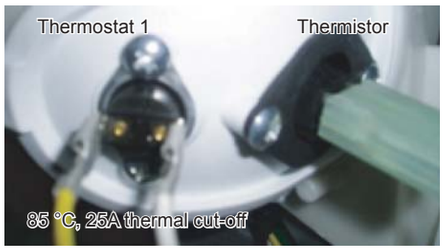
4-5. COMPONENT TESTING PROCEDURES

⚠ **WARNING**

To avoid risk of electrical shock, personal injury or death; disconnect power to dryer before servicing, unless testing requires power.

■ Component electrical testing (with ohmmeter)

- Thermistor resistance 10K Ω @ 25°C 77°F (2P-Blue & Red wire)
- Thermostat 1 resistance < 1Ω (White & Yellow wire)



- Thermostat 3 resistance < 1Ω (Red & Black wire)
  - If resistance is infinity, replace thermostat 3.
- Thermostat 2 resistance < 1Ω (Blue & Black wire)
  - If resistance is infinity, replace thermostat 2.
- Heater resistance 10 Ω (Blue & Blue wire)
  - If resistance is infinity, replace Heater.

- Measure resistance of the following terminal
  1. Door switch knob: open
     Terminal : “COM” - “NC” (1-3) : ∞ Ω
     Terminal : “COM” - “NO” (1-2) < 1Ω
  2. Door switch push: On
     Terminal : “COM” - “NC” (1-3) : ∞ Ω
     Terminal : “COM” - “NO” (1-2) < 1Ω

- Belt Cut-off S/W
  - Lever open: Resistance value < 1Ω
  - Lever push: Resistance value ∞ Ω

- Lamp resistance 80~100 Ω (Violet & gray)

- Motor (Electronic & GAS)

Contacts (● : Contact closed)

Function	1M	2M	3M	5M	6M
Start			●	●	
Run	●	●		●	●

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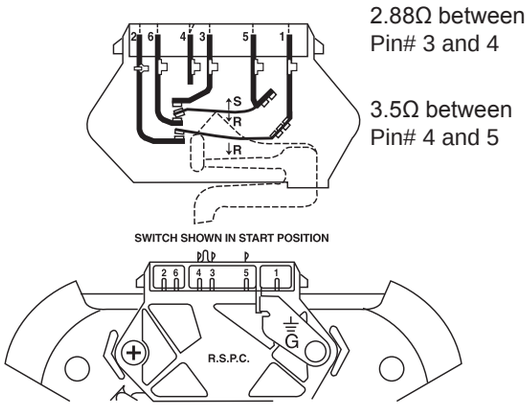
■ Centrifugal Switch (Motor)



2.88Ω between
Pin# 3 and 4

3.5Ω between
Pin# 4 and 5

■ GAS MODEL

Radiant Sensor(10RS)

- Resistance value < 1 Ω
- If resistance is infinite, replace Radiant sensor

Igniter(101D)

- Resistance value 40~400 Ω
- If resistance is infinite, replace Igniter

Gas Valve(25M01A)

- Valve 1-2 : Resistance value 1.2K Ω
- Valve 1-3 : Resistance value 0.5K Ω
- Valve 4-5 : Resistance value 1.2K Ω
- If resistance is infinity, replace Valve

Thermostat (60T21 Hi-Limit)230F-50F

- Resistance value < 1 Ω
- If resistance is infinity, replace Thermostat

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■ Sensor Bars & temperature sensor check

Sensor Bars

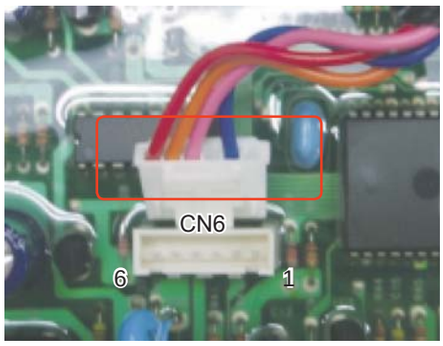
Disconnect harness and test Pink wire Pin 4 to Orange wire Pin 5.

- Approx ∞Ω without laundry
- Approx 190Ω ± 10% with wet clothes

Cycling Thermostat

Disconnect harness and test Blue wire Pin 2 to Red wire Pin 6.

- Approx 10 KΩ at 25 °C/77 °F



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5. PCB DIAGRAM

5-1. MAIN PCB

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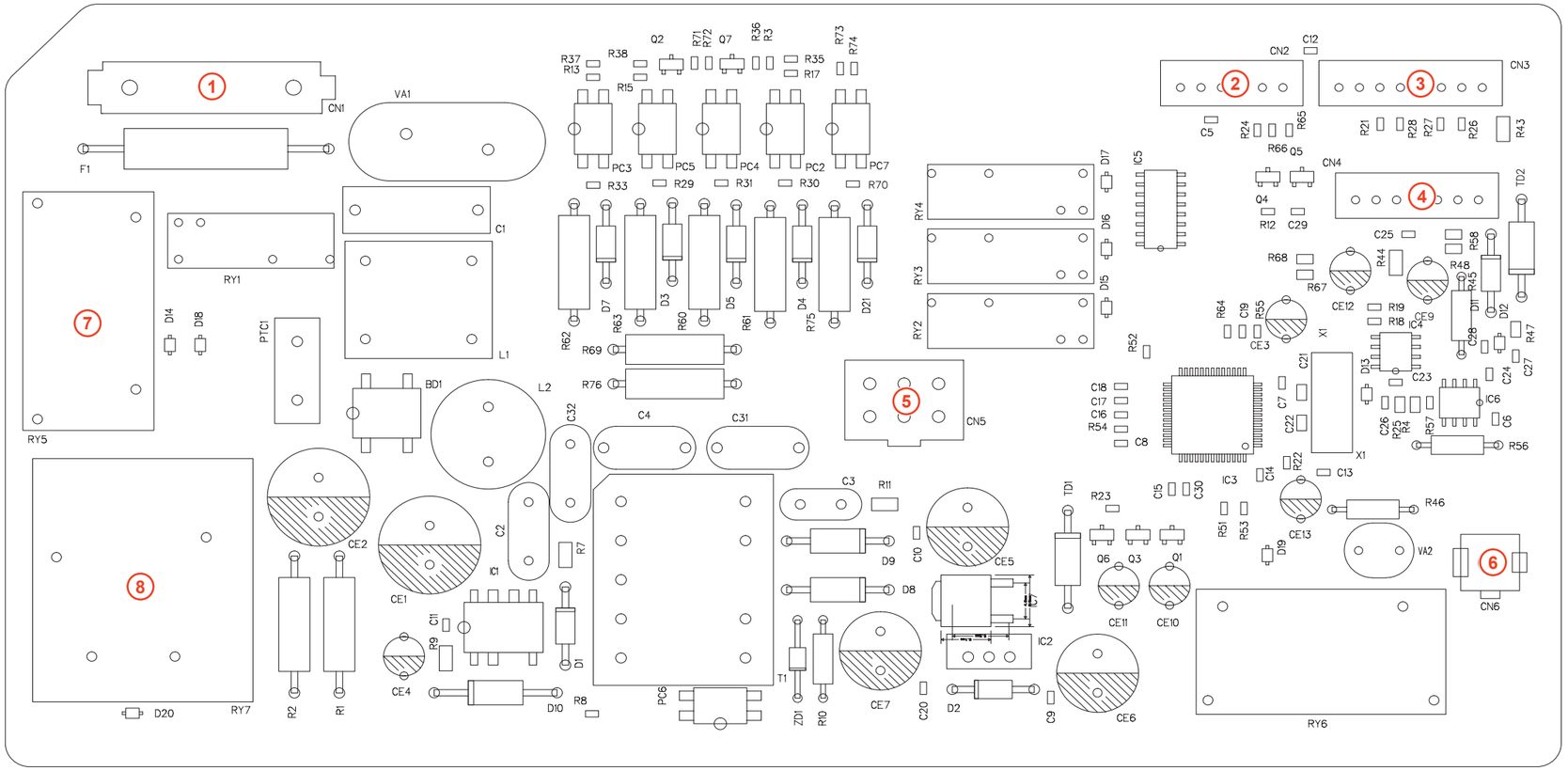

Location	Part No.	Function	
1	CN1	AC CONNECTION CONNECTOR	Supplies AC power to the PBA
2	CN2	SUB PBA COMMUNICATION CONNECTOR	The connector that controls communications with the Sub PBA corresponding to the Display.
3	CN3	MICOM FLASH CONNECTOR	The connector that writes software onto the MICOM.
4	CN4	SENSOR CONNECTION CONNECTOR	Connects the temperature sensor in order to detect the temperature of the heater.
5	CN5	VALVE CONNECTION CONNECTOR	It is connected to the steam Valve(Steam Models Only) and the Lamp of the Drive Block and controls the ON/OFF signal.

Location	Part No.	Function	
6	CN6	SET GROUND CONNECTION CONNECTOR	The connector connecting the Dryer Set and the ground of the PBA
7	RY5	MOTOR OPERATION RELAY	The relay that turns the Main Motor and off.
8	RY7	HEATER1 OPERATION RELAY	The relay that turns the Heater1 on and off.

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5-2. DETAILED DESCRIPTIONS OF CONTACT TERMINALS (MAIN PCB)

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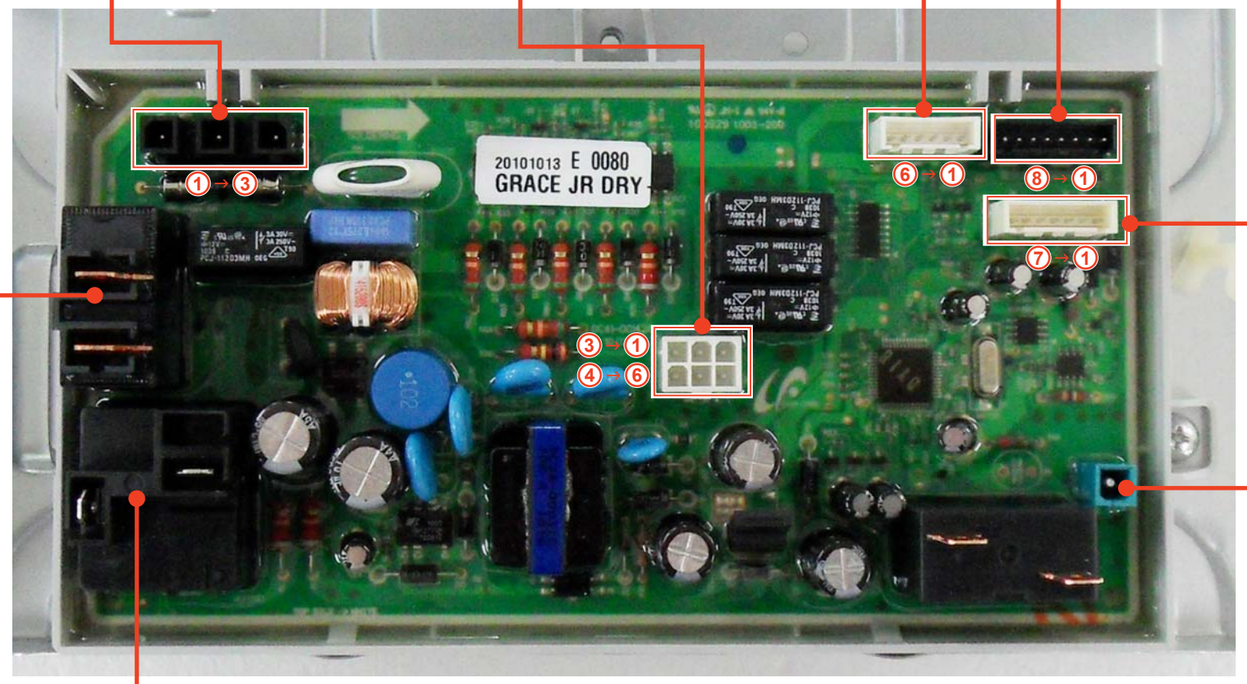
► **CN1**
1. AC Power Port
2. AC Power off Detection Sensor
3. Door Detection Sensor(LOCK,UNLOCK)

► **CN5**
1. STEAM VALVE1
2. Empty Pin
3. LAMP
4. Empty Pin
5. STEAM VALVE2
6. Empty Pin

► **CN2**
1. Communications Port(Rx)
2. Communications Port(Tx)
3. SUB RESET
4. 5V
5. DGND
6. 12V

► **CN3**
1. 5V
2. SO
3. SI
4. RESET
5. CLOCK
6. FLMDO
7. DGND
8. Empty Pin



► **CN4**
1. DGND
2. 5V
3. TEMP Sensor1
4. Fabric Detection Sensor
5. Fabric Detection Sensor
6. 5V
7. TEMP Sensor2

► **RY5**
1. Motor Relay Switch
2. Motor Relay Switch

► **CN6**
1. SET GND

► **RY7**
1. Heater1 Relay Switch
2. Heater1 Relay Switch

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5-3. SUB PCB

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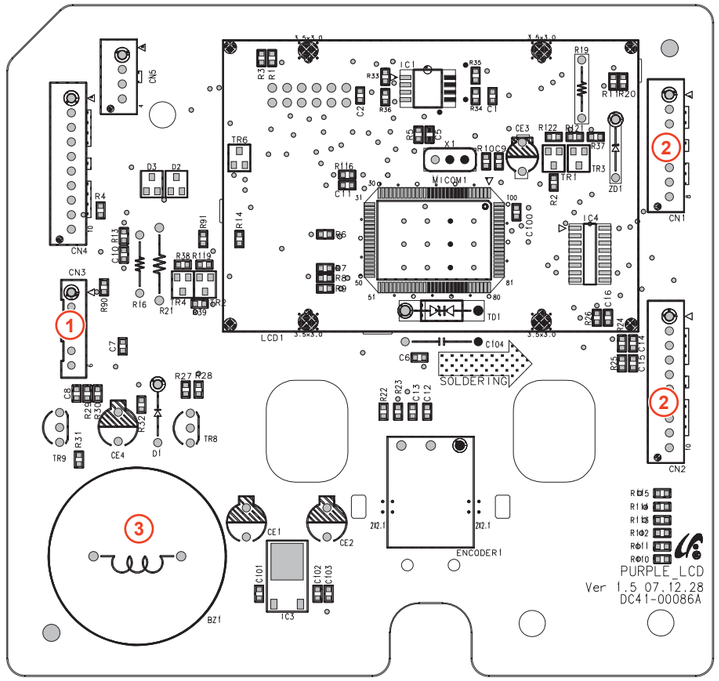

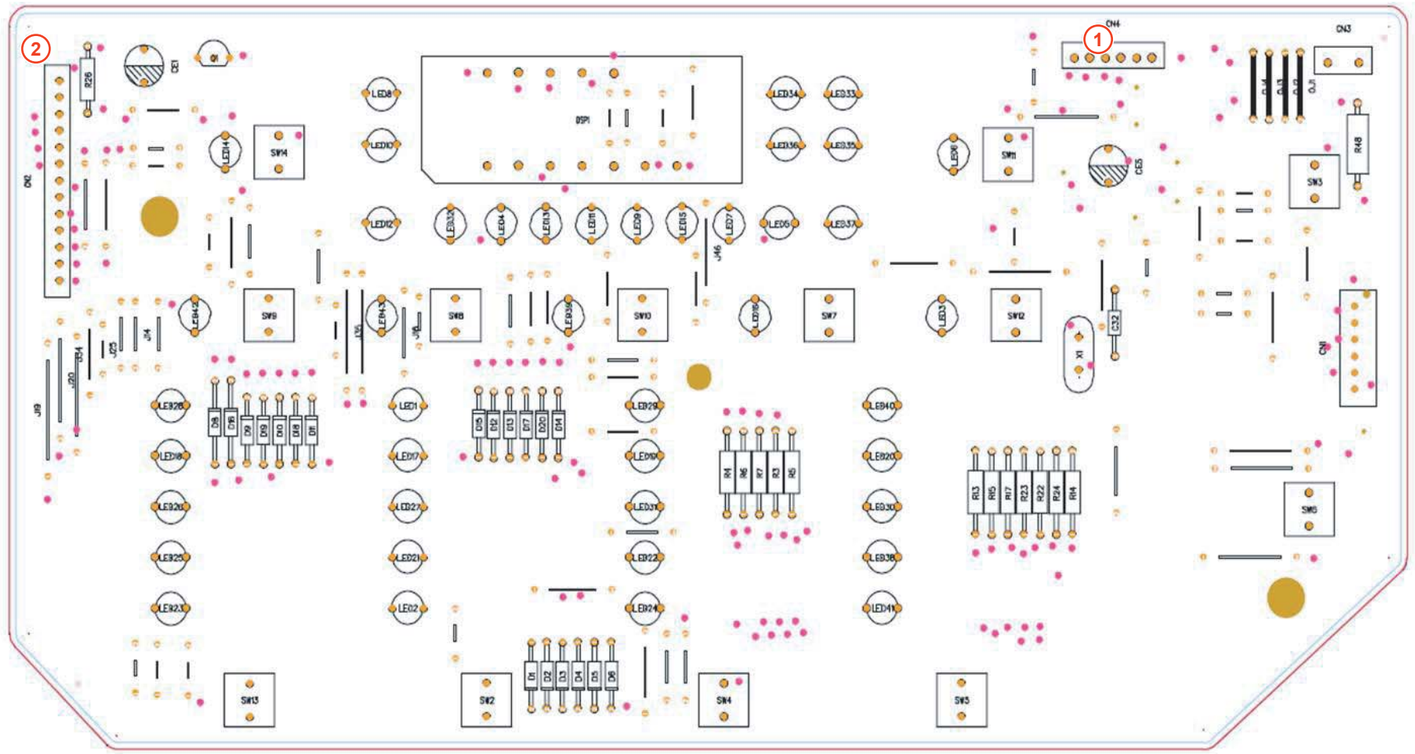

Location	Part No.	Function	Description
1	Graphic CN4	Main PBA Connection Port	Receives power from the Main PBA and provides a communications function.
2	Graphic CN2 and so on	Display and Buzzer Connections Port	Connects the D Board and the Graphics Board.
3	BZ1	Buzzer Circuit	Be generated sound when the menu key is pressed or the encoder is operaterd, the menu is closed.

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5-4. DETAILED DESCRIPTIONS OF CONTACT TERMINALS (SUB PCB)

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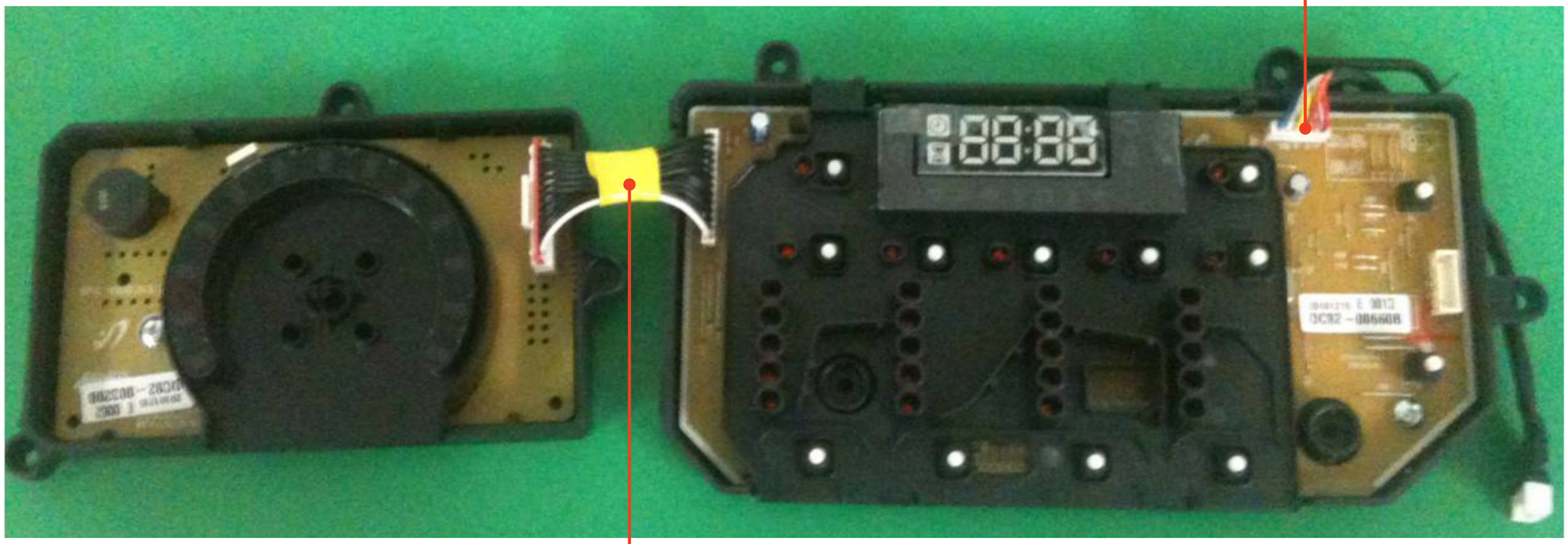
► **CN10**

1. Communications Port (Tx)
2. Communications Port (Rx)
3. Reset Signal ouput
4. 5V
5. Ground
6. 12V



► **CN2**

1. JOG signal
2. JOG signal
3. Ground
4. Led signal
5. Led signal
6. Led signal
7. Led signal
8. Led signal
9. Led signal
10. Led signal
11. Led signal
12. Buzzer signal
13. Buzzer signal

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6. WIRING DIAGRAM

6-1. WIRING DIAGRAM (ELECTRIC DRYER)

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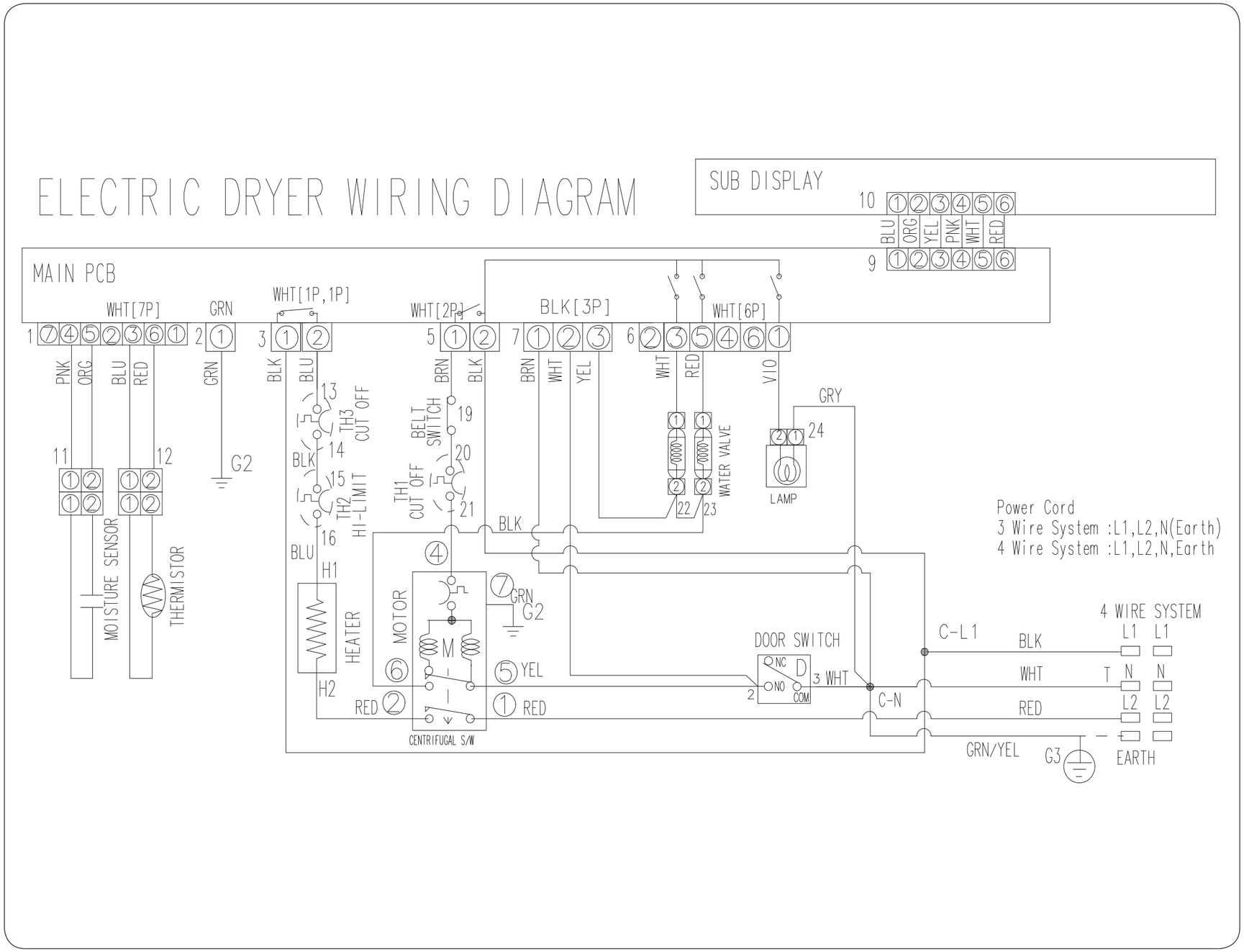
■ Reference Information

BLK	BLACK
BLU	BLUE
GRN	GREEN
GRY	GRAY
NTR	NATURAL
ORG	ORANGE
PNK	PINK
RED	RED
SKYBLU	SKYBLUE
VIO	VIOLET
WHT	WHITE
YEL	YELLOW



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6-2. WIRING DIAGRAM (GAS DRYER)

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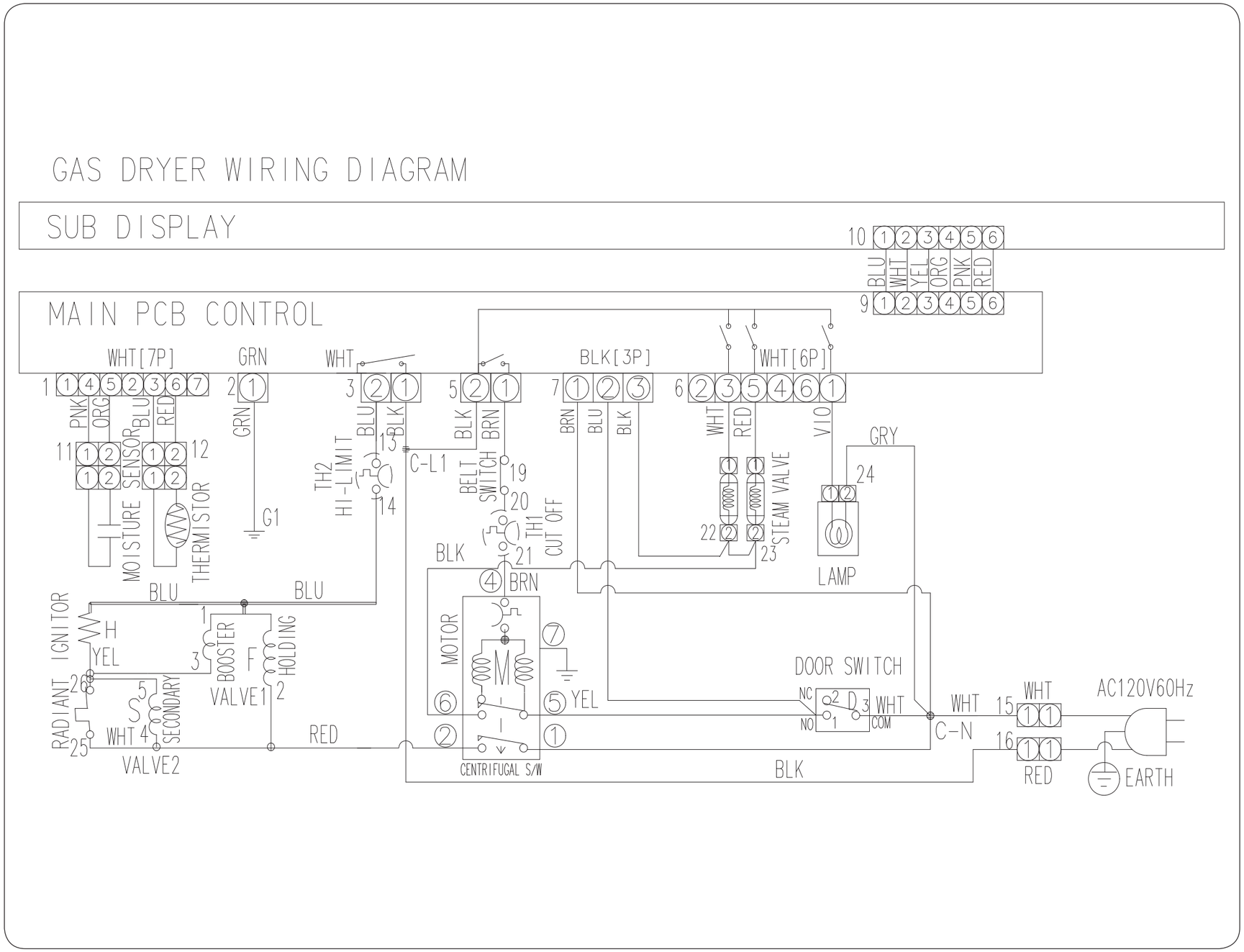
■ Reference Information

BLK	BLACK
BLU	BLUE
GRN	GREEN
GRY	GRAY
NTR	NATURAL
ORG	ORANGE
PNK	PINK
RED	RED
SKYBLU	SKYBLUE
VIO	VIOLET
WHT	WHITE
YEL	YELLOW



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7. SCHEMA TIC DIAGRAM

7-1. MAIN CONTROL

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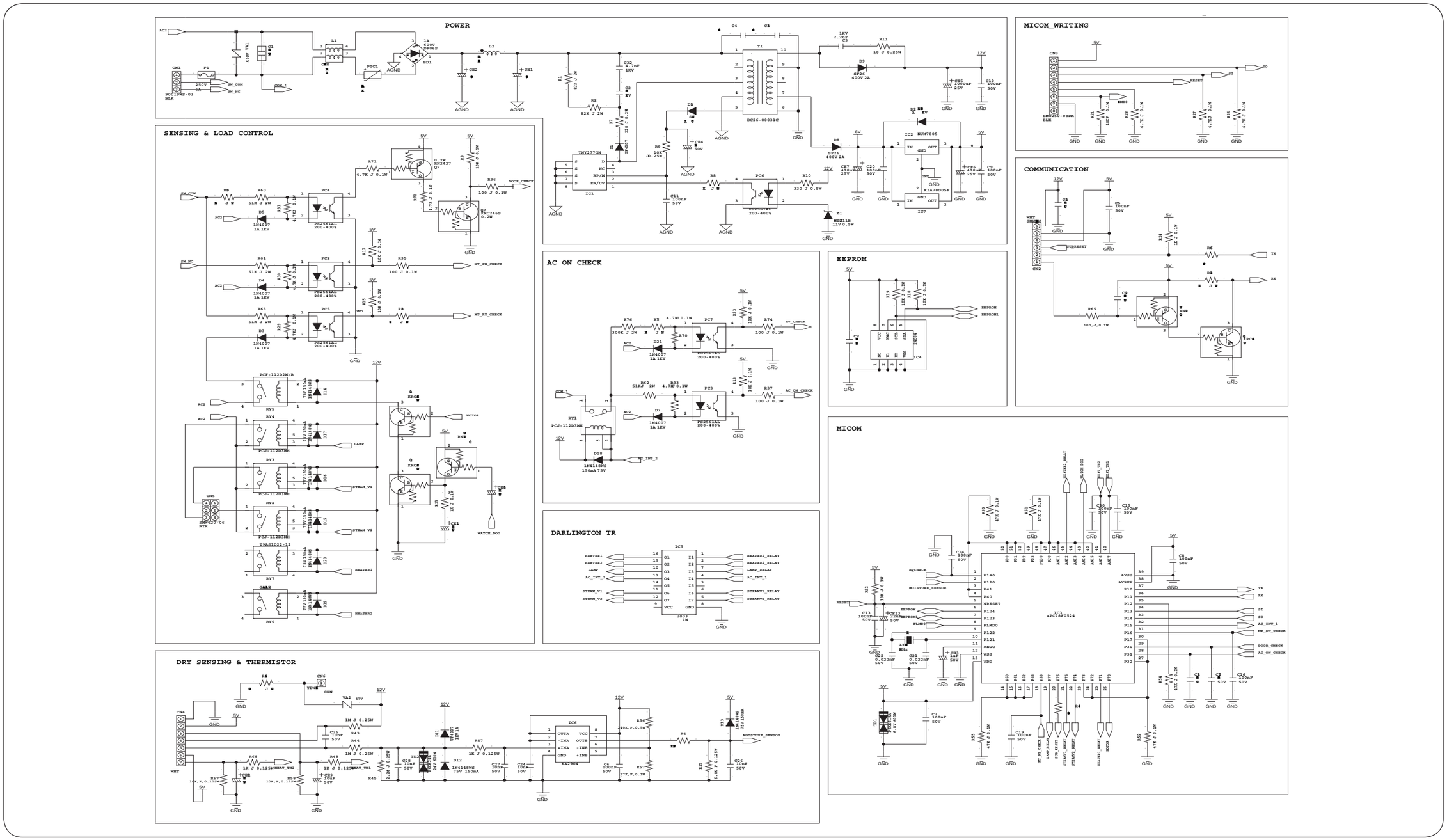

7-2. SUB CONTROL (DISPLAY)

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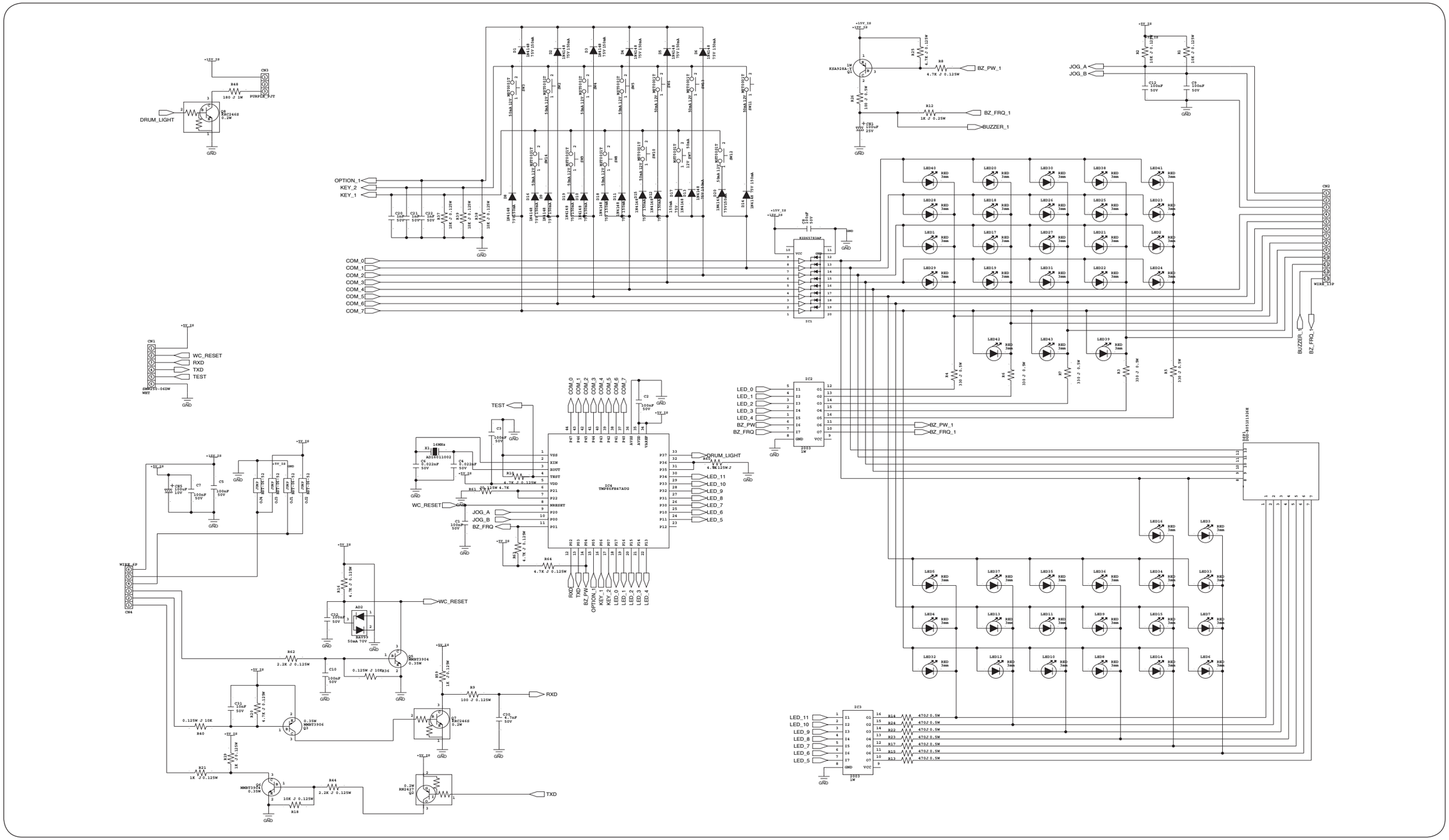

7-3. SUB CONTROL (GRAPHIC)

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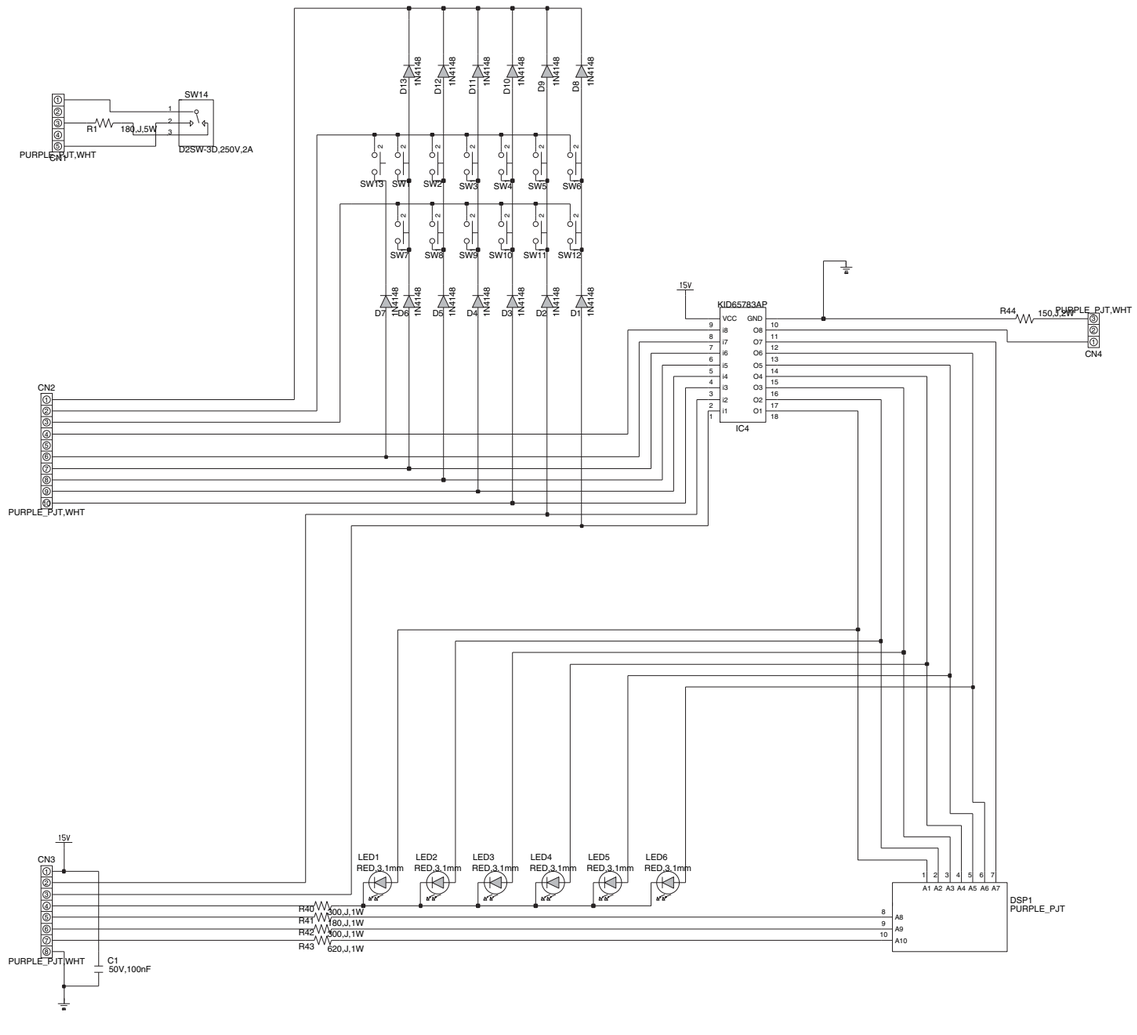

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